University of Alberta

The Effect of Religiousness on the Psychological Well-Being of Chinese Immigrants as Mediated by Social Support and Optimism

by

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ABSTRACT

Previous research has found a strong association between religiousness and subjective well-being among populations in North America (Ano & Vasconcelles, 2005; Hackney & Sanders, 2003). However, few studies have explored the effect of religiousness among immigrants and ethnic minority groups. This study examined the association between religiousness and subjective well-being among a group of 140 Chinese immigrants (61 women and 79 men) between 20 to 60 years of age (M = 36.1) in the Edmonton area. Because previous studies have often defined and measured religiousness based on Western norms, a Chinese-based religiousness measure was developed in this study. Results revealed that when measured based on Western norms, religiousness was negatively associated with depression through the mediation of social support, which was positively associated with religiousness and negatively associated with depression. However, Chinese-based religiousness was positively associated with depression through the mediation of optimism, which was negatively associated with both religiousness and depression.

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CHAPTER ONE

INTRODUCTION

Background Information

According to Denmark (2001), culture is one of the most pervasive elements of a person's environment because it represents the overarching principles that shape a society, which will in turn influence upbringing. However, it is hard to define culture concisely, not only because it is such a complex construct, but also because different societies usually have their own interpretations of the word "culture" (Bureau of General and Academic Education, 1969).

There is no one single correct list of components of culture; however, if there is a list that most people agree upon, language, art, literature, social customs, food, and religion are probably included (Matsumoto, 1996). These components are of such great value to human civilization that almost no one can live without noticing or being affected by them. Psychology is a science that seeks to explain the fundamental questions regarding human thought and behavior (Denmark, 2001), and that's why psychologists should not ignore the effect that culture and its changes have on individuals.

Continuous globalization has lead to a substantially increased exchange of information across the world, and has brought more challenges to researchers who are interested in studying culture and its influence. In the past few decades, due to the advancement of technology and the increasing population of international migrants, the world has become a "village". Cultural infusion as well as cultural conflicts can be seen everywhere (Ward, Bochner, & Furnham, 2001).

Canada is one of the world's major recipients of international immigrants. An astonishingly large proportion of the newcomers to Canada are from Asian countries, such as China, India, and the Philippines (Statistic Canada, 2006). According to an analytic paper of the 2006 census in Canada (Chui, Tran, & Maheux, 2006), the People's Republic of China was the leading source of newcomers to Canada. Fully 14% of recent immigrants who arrived between 2001 and 2006 came from the People's Republic of China. Because of the large size of the Chinese community in Canada, and because of the significant cultural differences of these people, many researchers are interested in studying their experiences and their cross-cultural adjustment (e.g., Costigan & Su, 2004; Deng, Walker, & Swinnerton, 2006; Lee & Chen, 2000).

Many personal and social variables, such as economic status, ethnic identity, cultural values, social support, and language proficiency, have been well-studied among ethnic minority groups and immigrants in North America (Chun, Organista, & Marín, 2003; Ward et al., 2001), but little is known about the effect of religiousness on subjective well-being in these groups and the connection it has with other factors such as age, gender, social support, optimism, length of residence in the host society, ethnic identity, self-esteem, and employment related-experience, (e.g. Aycan & Berry, 1996; Lam, Tsoi, & Chan, 2005; Nesdale & Mak, 2003; Salsman, Brown, Brechting, & Carlson, 2005).

Statement of Purpose

Previous studies have found a strong association between religiousness and subjective well-being among the North American population (Ano & Vasconcelles, 2005; Hackney & Sanders, 2003). The intent of this research was to explore the impact

of religiousness on subjective well-being among Chinese immigrants. Variables previously associated with religiousness and subjective well-being, such as perceived social support and optimism were included, along with other social and personal factors, to investigate the causal connection between religiousness and subjective well-being. To be more inclusive and culturally sensitive to the religious beliefs and practices of Chinese immigrants, I created a few items similar to the items in the published measures of religiousness used in this study. I wanted to see if these items developed by me were comparable to the items in the published measures developed by western researchers, and to see if a more inclusive and culturally sensitive measure of religiousness could be developed based on Chinese cultural norms.

Overview of the Study

Chapter Two consists of a review of literature on culture and psychology, subjective well-being, religion and religiousness, and the psychology of acculturation. A description of the method used in this study is presented in Chapter Three. Chapter Four reports on the statistical analysis procedures used and the results of these analyses. And Chapter Five includes a discussion of the findings, limitations, and implications of the study, as well as suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

Overview

There are five sections in this review. In the first four sections, fundamental theories and important research findings regarding culture and psychology, subjective well-being, religion and religiousness, and the psychology of acculturation, are presented. The last section of this chapter is a synthesis of the whole review.

The first section, *Culture and Psychology*, starts with a question about the definition of culture. Different aspects of this complex construct are presented. Then the function of culture is discussed from a general point of view. The last part of this section is a brief introduction to the psychological view of culture. It addresses the following topics: the American norms of psychological studies, the cross-cultural approach to psychological study, and psychological studies in multicultural societies.

The second section, *Subjective Well-Being*, starts with a discussion about the definition of subjective well-being, which leads to a discussion about the indicators researchers have used to operationalize this construct, and to a discussion about findings relevant to these indicator variables. The second part of this section presents other factors that have been found to be related to subjective well-being, including social factors such as social support, and personal factors such as optimism.

The third section, *Religion and Religiousness*, contains two parts. The first part of the discussion is about religion: What is religion; what are the most common religions in the world; and what effect religion has on people's behaviour. The second part of the discussion is about religiousness: the definition of this construct, how to operationalize

this construct, and the effect of religiousness on people.

The fourth section, *Psychology of Acculturation,* addresses theories of acculturation strategies and adaptation, the subjective well-being of international migrants, as well as methodological issues or difficulties in studying refugees and immigrants.

Culture and Psychology

What Is Culture?

According to Matsumoto (1996), culture is inevitably a complex and dynamic phenomenon. Any attempt to define this phenomenon might help diminish the confusion and ambiguity about it, but risks simplifying it to a dangerous degree. Culture can be used to refer to any aspect of any group of people (Matsumoto, 1996), but most definitions emphasize shared beliefs, values, customs, norms, roles, and self-definitions among a group of people (Triandis, 1996).

Different groups of people might define the concept of culture in different ways. For example, *wen hua* in Chinese is the counterpart of *culture* in English. According to the definition of *wen hua* in a very early Chinese book from the Han Dynasty, *Zhou Yi Zheng Yi*, there are two aspects of culture: literature/education and social customs. Even today, you can still use this word to indicate the educational level of a person; if that person is well-educated, you can say he or she is *you wen hua* (*you* means *has)*. In contrast, *culture* in English can be related to the cultivation or breeding of plants, which probably is not very easy to understand for Chinese people.

Obviously, providing a somewhat concise yet still accurate and valid definition for culture is a very challenging task. And this task is beyond the scope of this study. In

this study culture is a theoretical and explanatory concept not an empirical construct.

Because differences in behaviours are manifestations of culture (Bureau of General and Academic Education, 1969), the only way that we can understand the characteristics of a culture and to learn about different cultures around the world is to study the people who are living and changing these cultures. We study their cultures by observing and analysing their behaviours, and we compare their cultures by comparing the similarities and/or differences among them.

Culture's Role in the World

Culture has played a very important role in human history. From time to time, the transposition of culture from one place to another brings both communication of knowledge and prosperity. For example, Si Chou Zhi Lu (The Silk Road) in China can remind us of how the encounter of cultures can bring prosperity. Paper making technique and printing technique were both very important technologies that were invented by ancient Chinese people, and were brought to the western world through the Silk Road. Later in the 15th century, the first copy of the Bible was printed, and the world's first printing company appeared in Italy in 1466. It's difficult to imagine how western culture and economy would have evolved without these techniques that were invented in the east.

However, cultural differences can also lead to misunderstanding and conflicts. Ethnocentrism and stereotyping are seen every day in our society (Ward et al., 2001). Violence and war have never been stopped in human history. For example, 911 is one of the most traumatic incidents of conflicts that were induced by culture differences. Culture is so powerful that it can improve, and it can destroy. That's why it is so

important for us to study culture and its effects, and to prevent cultural misunderstandings and conflicts.

Psychology of Culture

Psychology is a science that studies people's behaviour and thought on an individual basis. Psychologists want to understand and explain why we do the things we do and to explain the differences in the behaviours of different groups of people (Matsumoto, 1996). That's why culture has become of increasing interest to many psychologists.

American norms of psychological studies. Psychology, as an independent experimental science, was considered to be first established by the German scientist Wilhelm Maximilian Wundt in the late 1870's, and since the 1880's it planted its roots and later blossomed in North America, after Johns Hopkins University established the first American Psychology laboratory (Lawson, Graham, & Baker, 2007). Today, the United States is still considered to be the major producer of psychological knowledge.

Most psychologists have been trained to use the American approaches to research, and there is still a tendency to universalize the findings of western psychology to cultures around the globe (Lawson et al., 2007). However, non-western and ethnic minority psychologists are increasingly claiming that their culturally distinct experiences can't be explained by western concepts and methods (Gergen, Gulerce, Lock, & Misra, 1996, as cited in Lawson, et al., 2007).

Cross-cultural psychology. Cross-cultural psychology refers to the systematic study of behaviour and experience as it occurs in different cultures, as it is influenced by culture, or as it changes in existing cultures (Triandis, 1996). According to

Matsumoto (1996), the cross-cultural approach can be found in any specific area or subdiscipline within psychology.

Psychological studies in multicultural societies. It is very important for us to understand the differences between different cultural groups around the world. However, for multicultural societies like Canadian society, understanding of the dynamics among different ethnic groups is also very important in order to understand the whole society.

Subjective Well-Being

Psychological adjustment has been the focus of many psychological studies because the major purpose of psychological study is to understand, explain, and predict human behaviour so that we can help improve people's well-being. However, the definition of this construct is general and somewhat unclear. It seems that this construct has been used interchangeably with terms like *psychological adaptation*, and *mental health* (e.g. Berry, 2003; Castro, 2003; Ying, 1995; Zheng & Berry, 1991). However, in my opinion, *subjective well-being* was more appropriate for this study because self-report measures were used and they were subjective measures.

Indicators of Subjective Well-Being

Subjective well-being has been measured by using positive measures such as life satisfaction and self-esteem, and by using measures of negative outcomes such as depression, distress, anxiety, and substance abuse (Diener, et al., 1985).

Satisfaction with life. As the cognitive-judgemental aspect of subjective well-being (Diener, et al., 1985), satisfaction with life is a sense of well-being according to an individual's own perception and criteria.

Research about subjective well-being in different groups of people has obtained relatively consistent findings. In their literature review, Diener and Diener (1996) found that people generally have a positive level of subjective well-being; the finding was based on data from 43 nations. Life satisfaction is often considered the key indicator of subjective well-being because it is related to many other indicators of general well-being such as happiness, self-esteem, and other constructs in positive psychology (e.g., Prelow, Mosher, & Bowman, 2006; Taylor, Chatters, Hardison, & Riley, 2001). It has also been related to depression, health status, occupational functioning, and effective interpersonal relationships (Gilman & Huebner, 2003).

Depression. According to *Diagnostic and Statistical Manual of Mental Disorders 4th Edition* (American Psychiatric Association, 2000), depression can be a feeling of severe and prolonged sadness that occurs as a reaction to stress or as a result of chemical imbalances in the brain, which can lead to depressed mood , diminished interest or pleasure in all activities, significant weight loss, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, and/or indecisiveness.

Depression has been widely used as an indicator of subjective well-being (Myers & Diener, 1995). Previous studies about depression have found that there are many factors that are related with depression, such as gender, social support, and cultural identity (Nolen-Hoeksema, 1990; Prelow et al., 2006; Sawrikar & Hunt, 2005).

Factors That Can Affect Subjective Well-Being

Studies of the general population in North America have found that, in addition to genetic and physical factors, there are many social and personal factors, such as

religiousness (often called religiosity), social support, optimism, life events, coping, employment status, and social economic status, that can affect an individual's subjective well-being (Ano & Vasconcelles, 2005; Hupcey, 1998; Karademas, 2007; Salsman et al., 2006; Scheier & Carver, 1992; Wight, Botticello, & Aneshensel, 2006)

During the last few decades, many social and personal predictors of subjective well-being, which were first discovered in European-American samples, have been extensively studied among immigrants and ethnic groups (Ward et al., 2001). At the same time, extensive efforts have been made to study acculturation indices as additional determinants of subjective well-being in the studies of cross-cultural and ethnic minority issues. In this section I discuss some of the factors that are most relevant to the theoretical model proposed for this research, such as perceived social support, optimism, and some acculturation indices.

Social support. The stress and coping approach of cross-cultural psychology considers life changes, personality factors, demographic characteristics, coping styles, and available adjustive resources, as important factors that influence adaptation (Ward et al., 2001). Social support, which is viewed as a generic construct including structural characteristics of social networks and functional aspects of social interactions, has always been considered as a very important predictor of individual's adjustment (Hupcey, 1998; Schreurs & de Ridder, 1997).

One aspect of the generic construct of social support is perceived social support. Pierce, Sarason, Sarason, Joseph, and Henderson (1996) defined perceived social support as a general perception of the availability of others upon whom an individual can rely for support. Perceived social support has been consistently associated with

various positive outcomes and appears to be actually more important than received social support (Salsman et al., 2005). According to Pierce et al. (1996), perceived social support has been proved to be the most consistent and strongest predictor of personal adjustment.

Social support is also one of the most important social factors for immigrants and ethnic groups. Wong, Yoo, and Stewart (2007) recently studied social support and subjective well-being among older Chinese and Korean people, and the results suggest that having more emotional/companionship support significantly contributed to better overall subjective well-being. Another recent study (Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006) conducted among immigrant groups suggested that social support provided by the host social network and by the ethnic social network are both beneficial to immigrants' subjective well-being.

Optimism. Optimism is considered an important personal factor that can affect subjective well-being of immigrants and ethnic group members, but it has been less frequently studied than social support. Optimism was defined by Scheier and Carver (1985) as the favorability of a person's generalized outcome expectancy, and it has been associated with lower levels of depressive symptomatology, and better coping strategies (Salsman et al., 2005). In their review, Scheier and Carver (1992) stated that evidence gathered provides considerable support for the assertion that optimism does in fact confer benefits; compared to pessimists, optimists manage difficult and stressful events with less subjective distress and less adverse impact on their physical well-being.

A few studies have examined the effect of optimism on subjective well-being

among immigrants and ethnic groups. For example, Uskul and Greenglass (2005), who examined predictors of subjective well-being in a Turkish-Canadian sample, found evidence that optimism positively relates to life satisfaction and negatively relates to depression.

Acculturation indices. When it comes to psychological studies of cross-cultural and ethnic minority issues, researchers have made extensive efforts to operationalize and assess individuals' acculturation level (Zane & Mak, 2003), and to investigate the effect of various acculturation indices on subjective well-being.

According to Ward et al. (2001), researchers who adopted the culture learning approach to study the adaptation process have emphasized the significance of culture-specific variables, such as knowledge about the new culture, language proficiency, acculturation strategies, and residence status in the new country. For example, proficiency in the official language(s) is considered to be one of the most important factors for immigrants and ethnic group members, who are non-native speakers. Parent-child relationship is also frequently studied, because possible conflicts between different generations caused by their different level of assimilation could affect adjustment of both sides.

Religion and Religiousness

Religion

Religion is commonly known as has something to do with supernatural power, worship, or rituals (Pargament, 1997). But what is religion?

What is religion? Religion means different things to different people (Pargament, 1997). Social scientists have defined religion in different ways. For example, it has

been defined as a set of symbolic forms and acts that relate man to the ultimate conditions of his existence (Bellah, 1970, as cited in Pargament, 1997), and as a system of beliefs and practices by means of which a group of people struggles with ultimate problems of human life (Yinger, 1970). There are several aspects of a religion. First, it has to have a well-developed system of beliefs that explains the mechanism of the world. Second, it has to have a relatively large group of converted believers. And third, it has rituals and ceremonies that are different from other religions (Pargement, 1997).

Chinese religion. Despite the fact that mainland China has been under communist rule since 1949 and is therefore officially atheist, China was always religious during its previous three millennia of history, and the religious traditions are more diffuse, more enmeshed in cultural customs, and less distinct as specific religions (Choquette, 2004). Thus, it is quite common for Chinese people who have believed and behaved religiously to declare that they have no religious affiliation, simply because the construct of religion was brought to China by the early missionaries who came from the western world. In the modern Chinese language, *religion* is often used together with *superstition.* When people say *religion*, it usually refers to specific religions such as Christianity, Islam, and Buddhism; when they say *superstition*, it usually refers to folk religious beliefs and practices.

The religious tradition in Chinese culture not only includes religious rituals and doctrines from Confucianism, Taoism, and transformed Buddhism, but also incorporates many other minor folk religious practices and beliefs (Bramadat & Seljak, 2005). For example, many Chinese people believe in the existence of spirits of their

ancestors and deities; they purchase ritual paraphernalia such as spirit-money and altars; and they make offerings to the dead of the family and to deities during traditional holidays (Choquette, 2004). These beliefs and customs have been deeply embedded in the Chinese culture for thousands of years, and have been kept exclusive to Chinese people and people with Chinese origin (Choquette, 2004). Thus, it is not hard to imagine that many researchers in North America have incorrect understandings of religiousness regarding people with Chinese origin.

The existing measures of religiousness, developed by researchers who have limited knowledge about Chinese religious traditions and customs, do not have items that are specific for Chinese religious beliefs and practices. Thus, a measure of religiousness based on Chinese norms should be developed and used to measure religiousness among Chinese immigrants and people with Chinese origins.

Data collected by Statistics Canada in 1991 (as cited in Choquette, 2004) show that of the total 586,235 Chinese in Canada, about 59% said they had no religious affiliation, about 29% said they were Christians, and about 12% said that they subscribed to Eastern non-Christian regions, such as Buddhism or Confucianism. The portion of so called *non-religious* in the Chinese community in Canada has not changed much; according to the 2001 census (Lindsay, 2001), about 56% Chinese in Canada said they had no religious affiliation.

Religiousness

People usually do not distinguish religiousness from spirituality; however, these two constructs are actually different, although they are related.

Religiousness or spirituality? There is an overlap between religiousness and

spirituality, however, they are two different concepts, and religiousness is defined somehow in relation to religion whereas spirituality—at least at the level of the person—may or may not be rooted in religion (Miller & Thoresen, 2003).

In research where the researcher's primary interest is in the effect of religion as a social institution, religiousness should be addressed other than spirituality. However, if the researcher is more interested in seeing an individual's personal characteristics and their effect on their approaches to religion, then spirituality should be the concept they study.

Psychological studies of religiousness. In North American studies, usually, researchers study religiousness by studying people with religious affiliations that are recognizable to western people, such as Christianity, Islam, Judaism, and Buddhism (Bramadat & Seljak, 2005). Religion has been studied extensively in North America because of the important role it plays in our society as a social institution. On an individual level, the relationship between religiousness and physical health has been consistently shown to be positive (Jones, 2004), but findings are mixed about the relationship between religiousness and mental health (Ano & Vasconcelles, 2005; Gong, et al., 2003; Hackney & Sanders, 2003).

Despite the inconsistency, most research demonstrates a positive relationship between religiousness and psychological functioning (Salsman et al., 2005). However, what is not clear is the mechanism by which this relationship operates; one possible explanation is that religiousness exerts its effect through other variables emphasized by positive psychology. For example, in Salsman et al.'s (2005) study, both perceived social support and optimism were found to be positively related with life satisfaction,

and to mediate the effect of religiousness on subjective well-being.

Despite the fact that religiousness has been extensively studied among the general population, few empirical studies have examined the effect of religious factors on mental health among different ethnic groups and immigrants. Because religion is very closely related with culture and ethnicity (Bramadat & Seljak, 2005), it should not be assumed to have equal importance for different ethno-cultural groups, and it should not be assumed to have equal importance for people in different hosting societies.

Psychology of Acculturation

Acculturation Strategies and Adjustment

Acculturation is one of the most important constructs for cross-cultural studies; it was first proposed and defined by Redfield, Linton, and Herskovits (1936, as cited in Trimble, 2003) as phenomena that occur when groups of individuals from different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups. Although it was originally identified and conceptualized by anthropologists, this construct now is included in the research agenda of psychologists, psychiatrists, sociologists, and many other professionals (Trimble, 2003). According to Berry, Trimble, and Olmedo (1986, as cited in Berry, 2003), in psychology, acculturation is studied either to control for experiences of social and cultural change that could interfere with comparative studies between groups, or to identify its effect on various individual behaviors and conditions.

Subjective Well-Being of International Migrants

When individuals have contacts with a new host society, they face many challenges, such as adjusting to a new language, to different customs and norms for social interactions, to unfamiliar rules and laws, and to lifestyle changes (Organista, Organista, & Kurasaki, 2003). According to Berry (1976, as cited in Berry, 2003), the changes brought by acculturation can be a set of rather easily accomplished behavioural changes, or they can be more problematic, producing acculturative stress.

Adaptation can be primarily psychological (i.e., adaptations that affect the sense of well-being) or sociocultural (i.e., adaptations that link the individual to others in the new society); and as a neutral construct, it can be both positive (i.e., well adapted) and negative (i.e., poorly adapted) (Berry, 2003). According to Berry (2003) and Trimble (2003), some researchers conceptualize and measure acculturation as a linear, unidirectional process, and they assume that the more an individual assimilates with the members of the host culture, the better his or her adaptation will be. However, a more recent understanding of this construct suggests that acculturation is a multifaceted phenomenon and can be selective, and that different people using different strategies will have different outcomes (Trimble, 2003). Thus, complete assimilation does not necessarily lead to optimal adaptation.

According to Berry and Kim (1988, as cited in Berry, 2003), most of the psychological studies about acculturation have found that the challenges of acculturation can be related to many mental health problems, such as depression, suicide, and substance abuse. However, it has been claimed that acculturative stress can either be negative or positive, and that acculturation does not necessarily lead to

psychological problems. It is said that the mental health of immigrants and refugees becomes a concern primarily when additional risk factors combine with the stress of migration (Canadian Task Force, 2006).

Methodological Issues in Research With Refugees and Immigrants

Pernice (1994) mentioned some challenges researchers are facing in research with refugees and immigrants, such as low response rates, community suspicion, high mobility of migrant groups, language barriers, and status differences between interviewer and respondents. These challenges or problems lead to the identification of several methodological issues that are commonly encountered in research with immigrants. One example is contextual differences–the differences between the society of origin and the hosting society; this can be as dramatic as war from peace, or life from death, but it can also be the more prevalent differences between different societies, such as differences of ideological systems, political systems, and cultural customs. Other problems can be the inappropriate use of instruments and inaccurate translations, sampling difficulties caused by low response rate, and confidentiality issues.

Synthesis

Acculturation has been extensively studied by psychologists in North America because of the increasing number of cross-national migrants coming to North America. Previous research generally suggests that acculturation can be challenging and stressful, which can have detrimental effects to individuals' physical and mental health. However, it has been argued that acculturative stress does not necessarily lead to negative adaptation, and that the result of acculturation really depends on the effects of

many different social and personal factors.

Subjective well-being is one of the most important and basic constructs in psychology; researchers have found that both social and personal factors, in addition to genetic and physical factors, can affect an individual's subjective well-being. For immigrants and ethnic groups, there are factors that have important implications for their well-being, including social support, optimism, and other cultural specific factors. However, there are other predictors of subjective well-being, such as religiousness, that have not been extensively studied among immigrants and ethnic groups. Even in the few studies that did examine the effect of religiousness among immigrants and ethnic groups, the construct was often defined and measured based on Western norms. Thus, when it comes to ethnic groups with distinctive cultural backgrounds, such as Chinese immigrants, the existing definition and measures of religiousness become problematic.

Directions for Future Studies

More cultural specific studies on mental health issues need to be conducted. Broad generalizations, such as the notion that acculturation is related to mental health, must be replaced with theories that examine some specific conditions and principles that govern the relationship between various indicators of acculturation and subjective well-being.

For instance, the relationship between acculturation and mental health is likely to be moderated by a variety of variables, including the nature of the migration, the receptiveness of the host society, and the degree of similarity between the culture of origin and the new culture (Organista et al., 2003). Therefore, it is important to

consider a specific ethno-cultural group's acculturation history and background to anticipate the likelihood of mental distress in future studies.

Also, researchers should be more cautious with cultural diversities when defining constructs and should take into account cultural norms. We have to consider the role of culture in the definition, experience, and expression of psychological distress and well-being, because mental health measures are often based on European-American norms. Thus, examining existing measures among ethno-cultural groups and developing new instruments that can be used with various ethnic groups are important.

CHAPTER THREE

THEORETICAL MODEL AND HYPOTHESES

The Theoretical Model

Salsman et al. (2005) proposed and examined a model about the effects of spirituality, religiousness, social support, and optimism, on subjective well-being, and about the relationships among these variables. Spirituality and religiousness were proposed to be the presumed causes of subjective well-being. Social support and optimism were proposed to mediate the effect of both spirituality and religiousness on subjective well-being. In Salsman et al.'s (2005) study, 217 American University students were asked to complete self-report questionnaires. They found that religiousness and spirituality were related but distinct constructs, and that both were associated with adjustment through social support and optimism.

For my study, however, only religiousness, social support, and optimism were included as determinants of subjective well-being. And I hypothesized that, for Chinese immigrants in Canada, social support and optimism are mediating factors between religiousness and subjective well-being. Furthermore, because existing measures of religiousness are based on western norms, I developed a measure of religiousness based on the Chinese folk religion and on Chinese culture norms. Thus, I included two religiousness constructs in this study, the western-based religiousness, and the Chinese-based religiousness. Figure 1 shows the hypothesized relationships among the five major constructs in my study: Western-based religiousness, Chinese-based religiousness, social support, optimism, and subjective well-being.

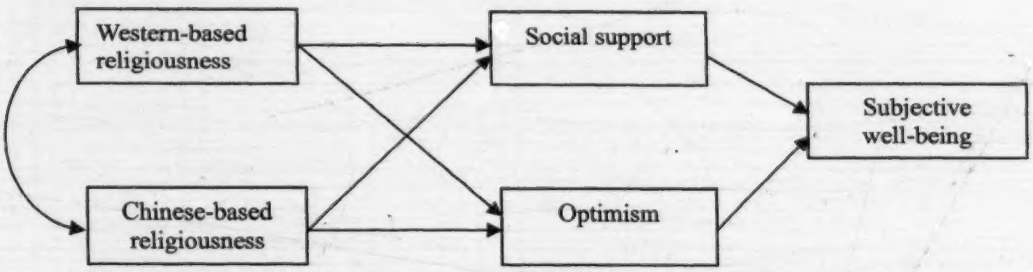

Figure 1. Proposed model: Effect of western-based religiousness and Chinese-based religiousness on subjective well-being, which are both mediated by social support and optimism.

I hypothesized that western-based religiousness would be positively and indirectly related with subjective well-being among Chinese immigrants in Canada. Because previous research generally suggests a positive and indirect relationship between religiousness and mental health among the general population in North America (Ano & Vasconcelles, 2005; Hackney & Sanders, 2003; Salsman et al., 2005), the same kind of effect of religiousness could be expected among the Chinese immigrants who have been living and adjusting in the same cultural environment.

I also hypothesized that Chinese-based religiousness would be positively and indirectly related with subjective well-being. The Chinese folk religion can provide support and comfort to their believers like western religions do. For example, a very distinct characteristic of Chinese folk religion is the belief that people receive guidance and supernatural help from the spirits of their ancestors and deities in exchange for worshiping the spirits. Also, it is believed that these spirits can see the future, and that when worshipers have problems in their life, they should ask for the spirits' advice. Furthermore, the beliefs of karma and reincarnation can serve as an attribution system

that could help people understand their own experience, and provide purpose of life to believers who would conduct good deeds in this life in order to earn a better next life.

Both western-based religiousness and Chinese-based religiousness were hypothesized to be positively related with subjective well-being, however, these two relationships might have different strength. I hypothesized that among Chinese immigrants in Canada, western-based religiousness would be more significantly related with their subjective well-being. Churches and other western religious organizations in the host society may be providing immigrants opportunities to learn about western culture and to build their social connections. By accepting western religious beliefs and attending western religious activities, new immigrants may have better adjustment to the hosting society.

Both western-based religiousness and Chinese-based religiousness were proposed to be positively related with subjective well-being, however, the nature of the association between these two religiousness constructs was not clear. It is possible that they are measuring two independent constructs. However, it is also possible that these two measures are measuring the same construct. However, the possibility of these two measures being totally unrelated or of them measuring the same thing was considered to be small. If these two religiousness constructs were related to each other, the relation can be either positive or negative. A positive association could be due to the effect of some common causes, such as educational level, age, and gender; people with certain demographic characters may tend to be more religious than others, no matter what religious affiliations they have. A negative association could be due to the conflicting doctrines of religions from different cultures. For example, Christianity,

Islamism, and Judaism are monotheisms; and in these religions, God is believed to be the creator. Chinese folk religion and Buddhism, on the other hand, are polytheisms; and in these religions, the world is believed to exist unvaryingly and to operate by certain unchangeable rules. I expected that, the most plausible relationship between western-based religiousness and Chinese-based religiousness was a positive yet moderate correlation.

In accordance with the findings in the general population (Salsman et al., 2005), I hypothesized that the effect of western-based religiousness on subjective well-being of Chinese immigrants would be mediated by perceived social support and optimism. The Chinese religious organizations here in Canada may also serve as institutions where immigrants can build their social network with other Chinese people, thus those who had higher score of Chinese-based religiousness would have higher level of perceived social support. The Chinese religious beliefs could also provide purpose of life and coping strategies, thus higher score of Chinese-based religiousness was hypothesized to be associated with higher score of optimism. Both perceived social support and optimism were found to be positively related with subjective well-being in previous studies (Hupcey, 1998; Karademas, 2007; Salsman et al., 2005). Hence, I hypothesized that the effect of Chinese-based religiousness on subjective well-being would be mediated by perceived social support and optimism.

If western-based and Chinese-based measures of religiousness have a positive association with each other, then their effects may be cumulative, which means people who have high scores on both western-based and Chinese-based religiousness would have the best adjustment, and people who have high scores only on one of the two

religiousness would have better adjustment than those who have low scores on both religiousness measures. If western-based religiousness and Chinese-based religiousness have a negative association with each other, people with high level of western-based religiousness may have gradually given up their Chinese religious beliefs and practices, people who kept their Chinese religious beliefs strong may have rejected western religious beliefs. However, having either one of the two religiousness can be helpful to their adjustment. In my opinion, it is more likely for some Chinese immigrants to have high scores on both religiousness measures than for them to have high score on only one measure, because the Chinese culture has always been very inclusive and Chinese people are very skilful at accepting multiple belief systems and at integrating them.

Summary of Hypotheses

To summarize, for Chinese immigrants in Canada, I hypothesized that both Western-based religiousness and Chinese-based religiousness would be positively related with subjective well-being, and that the effect of western-based religiousness would be stronger than that of Chinese-based religiousness. I hypothesized that western-based religiousness and Chinese-based religiousness would be positively and moderately related with each other, and their effects on subjective well-being would both be mediated by social support and optimism. And I hypothesized that participants who had high scores on both measures of religiousness would have the best subjective well-being, and that those who had high scores on only one measure would have better subjective well-being than those who had low scores on both measures.

CHAPTER FOUR

METHOD

Participants

In this study, five criteria were developed to recruit participants: the participant must have a Chinese ethnic background, must be born outside of Canada, must be between 20 to 60 years of age, must be a permanent resident or a citizen of Canada, and must have been living in Canada for more than three years. As a result, a group of 140 Chinese immigrants (61 women and 79 men) between 20 to 60 years of age (M = 36.1) were recruited in the Edmonton area. All of the participants were born outside of Canada; the majority (86%) came from Mainland China, and others came from Hong Kong, Taiwan, Malaysia, Singapore, and Trinidad. All of them have obtained long term residency in Canada. All of them finished high school, 98 percent of them received post-secondary education, and 84 percent of them received Bachelor's degree or other higher degrees. Details of the demographic characteristics of this sample can be found in Appendix A. Due to limited resources, the sample was drawn from the Chinese immigrant community in the Edmonton area based on convenience and accessibility, which indicates the limited representativeness of the sample, as individuals in this sample do not necessarily represent the target population.

Variables and Measures

In this study, 11 sets of measuring materials were used, including eight published questionnaires, one English cloze test, and two researcher-developed questionnaires: one for demographic variables, and the other for measuring religiousness based on Chinese cultural norms. In order to distinguish the published measures of religiousness

from the researcher-developed measures of religiousness, the published measures were called measures of Western-based religiousness.

In this study, the participants could choose to complete the questionnaires either in English or in simplified Chinese. All the published questionnaires used in this study, except for the Satisfaction with Life Scale (SWLS; Diener et al., 1985), were originally developed in English, and were translated into simplified Chinese in this study. Details about the translation process can be found in the procedure section of this chapter. The researcher-developed measures were first developed in English, and then translated into Simplified Chinese through the same translation procedure.

For the SWLS, the Taiwan version translated by Wu & Yao (2006) from English to Chinese was used. The Taiwan version was printed in traditional Chinese. In this study, it was reprinted using simplified Chinese characters. The reprinted questionnaire was considered equivalent to the Taiwan version because the simplified form of the characters is just a form with fewer strokes and a clearer structure, and it conveys the same meaning as the traditional form.

Subjective Well-Being

There were two measures of subjective well-being in this study, including one for life satisfaction and one for depression.

Life satisfaction. The Satisfaction With Life Scale (Diener et al., 1985) is a 5-item measure developed to assess a global, cognitive evaluation of life satisfaction (Pavot & Diener, 1993). This scale was chosen for this study because it had already been used among Chinese populations (Sachs, 2003; Wu & Yao, 2006). In either English or Chinese, participants indicate their level of agreement with individual items (e.g., "I

am satisfied with life.") on a 7-point scale ranging from 1=*strongly disagree* to 7=*strongly agree*. A total score of the five items was calculated. Cronbach's alpha for this measure was calculated with the pooled English and Chinese responses (α=.89).

Depression. Depression was measured by The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), which was found to be one of the most widely used measures of depression (Vahle, Andresen, & Hagglund, 2000). The CES-D has been frequently used among Asian populations, including Chinese (e.g., Cheng, & Chan, 2005; Wang, Tang, Xu, & Shen, 2006; Wu, Tran, & Amjad, 2004). It is a 20-item self-report scale that measures the current level of depressive symptomatology in the general population, with an emphasis on depressed mood during the past week (Radloff, 1977). The major reason for choosing this measure was because it is freely available in the public domain.

Participants were asked to indicate how often certain depressive feelings or thoughts (e.g., "I thought my life had been a failure.") occurred during the past week, by using a 4-point scale ranging from 1= *rarely or none of the time (less than 1 day)* to 4= *most or all of the time (5-7 days)*. Despite the fact that the scale ranges from 1 to 4, the score for each of these items ranges from 0 to 3. Individual scores for items 4, 8, 12, and 16 were reverse coded so that the higher scores indicated higher levels of depression. A total score was calculated. With the responses in English and in Chinese pooled, Cronbach's alpha was calculated to be .85.

Western-Based Religiousness

In this study, three published measures were used to measure Western-based religiousness, including a measure of strength of religious faith, a measure of intrinsic and extrinsic religiousness, and a measure of religious practices.

Strength of religious faith. The Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997) was administered in this study to measure strength of religious faith. Respondents were asked to indicate their agreement with 10 statements (e.g. "I pray daily.") by using a 4-point scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*. A total score was calculated by adding scores from individual items; it could range from 10 (low faith) to 40 (high faith) (Plante & Boccaccini, 1997). Cronbach's alpha was .98 for all responses.

Intrinsic and extrinsic religiousness. The Intrinsic/Extrinsic Religiousness Scale-Revised (I/E; Gorsuch & McPherson, 1989) was administered in this study to measure participants' intrinsic and extrinsic religiousness. Participants were asked to indicate their agreement to each of the 14 items by using a 5-point scale ranging from 1= *I strongly disagree* to 5= *I strongly agree*. Among the 14 items, there are eight items measuring intrinsic religiousness (e.g., "I enjoy reading about my religion."), and there are six items measuring extrinsic religiousness (e.g., "I go to church because it helps me to make friends."). A total score of intrinsic religiousness was calculated by first reverse coding item 3, 10, and 14 in the Intrinsic/Extrinsic Religiousness Scale-Revised (Gorsuch & McPherson, 1989), and then adding them up with the scores from item 1, 4, 5, 7, and 12. A total score of extrinsic religiousness was calculated as the sum of individual scores of the other six items in the Intrinsic/Extrinsic Religiousness

Scale-Revised (Gorsuch & McPherson, 1989). High internal consistency was found with both of these two subscales. Calculated with all responses included, Cronbach's alpha for the intrinsic subscale was .87, and that for the extrinsic subscale was .81.

Religious practices. The Minnesota Twin Registry Religious Background and Practices Survey (Koenig, McGue, Krueger, & Bouchard, 2005) consists of two sections. The first section was designed to collect information about the religious affiliations and denominations of each member of the participants' family while they were growing up and during the past years. This information was not relevant for this study, so it was not included.

The second section consists of nine questions about the respondent's religious practices, including religious service attendance, prayers, religious holiday observations, and so on. The item 7 response alternatives were *yes* or *no.* For other items, participants were asked to indicate how often they currently attend or participate in these activities. The response scale for these items differed based on item content, but ranged from *never* to a high frequency description (e.g. *more than once a week*, *daily*, and *always*) (Koenig et al., 2005).

The participants in the previous study (Koenig et al. 2005) were required to respond to each of the questions regarding the retrospective and current religiousness of all the members of their families. In this study, only the current religiousness of the participant was of interest, so the questions were modified accordingly.

For the religious practice measure (i.e. modified second section of The Minnesota Twin Registry Religious Background and Practices Survey; Koenig et al., 2005), total scores were calculated by adding up individual scores of the nine questions. A total

sum of the scores from these nine items can be used as the total score despite the fact that the response scale for the items differed, because the standardized composite correlated very highly with the raw composite (Koenig et al., 2005). Originally, the nine items consisted of two subscales, internal and external. However, because distinguishing the influence from environmental factors or heritable factors was not the primary concern of this study, and also because factor analysis conducted by other researchers confirmed that all nine items had significant weight on a single factor, data were pooled from these two subscales. Cronbach's alpha was calculated with all responses included (α= .95).

Chinese-Based Religiousness

There were 29 items in the Chinese-based religiousness questionnaire. From the participants' point of view, these 29 items were divided into two groups with different question formats. For the first group of 24 items, the participants were asked to indicate their agreement with each of the 24 statements (e.g. "Religious practices, such as prayer, meditation, and the recitation of religious scriptures, are for peace and happiness.") by using a 5-point scale ranging from 1=*I strongly disagree* to 5=*I strongly agree.* For the second group of five items, however, the participants were asked to indicate the frequencies of their religious activities (e.g. "How often do you go to temples or other holy places to worship the deity/deities?") by using a response scale that differed based on item content, ranged from *never* to a high frequency description (e.g. *more than once a week*, *daily*, and *always*).

However, it is very important to note that these 29 items were developed from two different sources. There were items developed by me based on my own knowledge and

understanding of Chinese religious beliefs and practices. These items were called the *newly developed items*. There were also items developed by adapting some of the items from the published Western-based religiousness measures. Those items were called the *adapted items*. The first group of 24 items was a mixture of items from both sources, and the five items in the second group were all adapted items.

Newly developed items. Based on my knowledge and understanding of some of the most prevalent religious beliefs and practices embedded in the Chinese culture, 14 items were developed to measure Chinese-based religiousness (e.g. "I believe in reincarnation.", and "I have altars, shrines, or statuettes of deities at my workplace."). A full list of the 14 items can be found in Appendix B. The Cronbach's alpha with all responses included was .93.

Adapted items. A few items from each of the three Western-based religiousness measures were chosen to be adapted. The reason for adapting these items was that Judeo-Christian terms such as *God* and *church* were used in these items, although their authors claimed that they can be used to measure the general construct of religiousness. It might lead to inaccurate responses when these items were used to measure Chinese immigrants' religiousness, simply because Chinese immigrants might have a different vocabulary for describing their Chinese religious beliefs and practices. In other words, these were the items that made those published measures "Western".

To make these items more applicable to people with a Chinese cultural background, I substituted these Judeo-Christian terms with words that are relevant to Chinese religious traditions and culture norms. For example, "I consider myself active in my religious community/organization/group" was adapted from the fifth item ("I

consider myself active in my faith or church.") in the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997). The item "I have often had a strong sense of the presence of spirits or of deities" was adapted from the fifth item ("I have often had a strong sense of God's presence.") in the Intrinsic/Extrinsic Religiousness Scale-Revised (I/E; Gorsuch & McPherson, 1989). And the "Do you celebrate Qingming, Buddha's Birthday, Yulanjie, or other traditional Chinese religious festivals in a religious way?" was adapted from the sixth item ("Do you observe religious holidays and celebrate events like Christmas or Passover in a religious way?") in the second section of the Minnesota Twin Registry Religious Background and Practices Survey (Koenig et al., 2005).

In total, 15 items were adapted. The response scale for these items varied because the original items used different scales. A list of these 15 adapted items can be found in Appendix C. Despite the fact that the responding scales were different for these items, Cronbach's alpha was calculated to be .90.

Social Support

The Duke-UNC Functional Social Support Questionnaire (Duke-UNC; Broadhead, Gehlbach, De Gruy, & Kaplan, 1988) was used to measure social support in this study. It has eight items and uses a 5-point scale ranging from 1= *as much as I like* to 5=*much less than I would like.* Participants were asked to rate the extent to which a particular type of social support (e.g., "I get people who care what happens to me.") they received. A total score can range from 8 to 40, with higher score indicating higher level of social support. Cronbach's alpha in this study was .93, calculated with responses both in English and in Chinese.

Optimism

The revised version of Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994) was used to measure optimism. There are six items in this measure with 4 fillers (i.e., items 2, 5, 6, and 8.). Each item is rated on a 4-point scale that ranges from 1=*I agree a lot* to 4= *I disagree a lot*. Three of the items are negatively framed (e.g., "If something can go wrong for me, it will.") and three of the items are positively framed (e.g., "I am always optimistic about my future."). Scores of the three negatively framed items were reverse coded so that higher score indicates higher level of optimism. A total score of optimism was calculated as the sum of individual scores of the six non-filler items. Cronbach's alpha was .62 in this study with all responses included.

English Proficiency

There were two kinds of measure in this study for English Proficiency, self-report rating and English cloze test.

English self-report proficiency. The participants were asked to rate their own English proficiency in four aspects separately using a 4-point scale from 1= *no proficiency* to 4=*native like proficiency*. The four aspects were listening, speaking, reading, and writing. With both English and Chinese responses included, the internal consistency reliability was very high (α=.94) in this study.

English cloze test. Participants were asked to complete an English cloze test, which consists of a simple text where carefully selected words were deleted. This test was constructed by Bachman (1982) and quoted in John Jonz's article (1990). The participants' scores were the number of blanks they each correctly filled in. In this study, the maximum total score was 30. Cloze tests were found to be highly correlated

with almost every other type of language test and to be a generally consistent measure (Hinenoya & Gatbonton, 2000). For this study, a cloze test was used because it was more constrained in length and hence less frightening to the participants than other types of English proficiency measures.

Social Desirability

Form C of The Marlowe-Crowne Scale of Social Desirability (MC-C; Reynolds, 1982) was administered in this study to measure social desirability. It consists of 13 items that assess respondents' tendency to provide inaccurate responses due to impression management. Response options are *true* or *false*. There are eight items that should score 1 when the answer is *false*, and score 0 when the answer is *true* (e.g., "It is sometimes hard for me to go on with my work if I am not encouraged."). The other six items are the opposite (e.g., "No matter who I am talking to, I'm always a good listener."). Scores of the first group of eight items were reversed coded so that higher scores indicate greater impression management. Total score was calculated. Cronbach's alpha was .76 in this study with both English responses and Chinese responses included.

Demographic Variables

Respondents were asked to indicate their age, gender, their previous (before arriving in Canada) religious affiliation, and their current religious affiliation. In addition, respondents were asked to indicate their highest level of education attained, place of origin, length of stay, personal annual income, ethnic identity, employment status, marital status, legal status in Canada, and whether or not they have children.

Procedure

Translation of Questionnaires

All the questionnaires that were originally developed in English were translated into Simplified Chinese, to ensure that participants could participate either in English or in Chinese, so that low English proficiency would not stop any participant from understanding the questions.

A forward and backward translation procedure was used in this study. A committee of four bilingual translators (including me) was responsible for the translation and the back translation. All translators are native speakers of Chinese and fluent English speakers, and two of them have post-secondary education background in psychology. The translators were first divided into two groups with one of the translators with a psychology background in each of the groups. The first group conducted the forward translation from English to Chinese, and the second group conducted the back-translation from Chinese to English without previously knowing the items on the original English questionnaires.

Later, the four translators were gathered together to go over each item of all the questionnaires. First, they compared the English questionnaires obtained through back-translation to the original English questionnaires to see if there was any inconsistency in meaning. Inconsistent expressions were marked on the back translated English version, and adjustments were made on the corresponding expressions on the Chinese version. Then they compared the Chinese questionnaires to the original English questionnaires to make sure that these two were as equivalent as possible. All adjustments were made through discussion, and a final Chinese version was obtained

based on consent from all four translators. Among the 140 participants, 34 of them chose to answer the questions in English even when the Chinese version was available.

Advertisement and Recruitment

As previously mentioned, five criteria were developed to recruit participants: the participant must have a Chinese ethnic background, must be born outside of Canada, must be between 20 to 60 years of age, must be a permanent resident or a citizen of Canada, and must have been living in Canada for more than three years. Advertisements (Appendix D) were posted on popular websites among the Chinese community in Edmonton area (e.g. Edmontonchina.ca, Northbeauty.org, etc.), and were distributed in person through personal contacts.

Distribution and Returning of Questionnaires

There were two ways for the participants to complete the questionnaires. They could either complete them on paper, or complete them online. Both English and Chinese versions were available in both formats.

The online questionnaires were used because of the concern that if I relied solely on distributing questionnaires in paper form, more participants would be discouraged by the fact that they needed to mail back the completed survey, and also because of the limited financial resources available for printing and mailing. The availability of this option was expected to be helpful to the recruiting of participants for two reasons: first, the use of computer and internet should not be challenging or intimidating to most recent Chinese immigrants who are expected to be highly educated (thanks to the immigrant selection policy) and to be familiar with computer and internet use; second, all the participants were notified of the alternative options (on paper vs. online) to

complete the questionnaires. As a result, more than half of the responses (52.1%) were collected online.

A website link for the online questionnaires was attached with each of the advertisements distributed. When a participant saw the advertisement online or on paper, he or she could choose to either directly go to the website by using the link, or to contact me by phone or e-mail and get the questionnaires in hard copy.

Detailed instructions and a request form for a brief report of the research findings were included in each questionnaire package, together with two pre-paid envelopes prepared for the mailing back of the completed questionnaires and the request form. The completed questionnaires and the request forms were required to be mailed back separately to ensure anonymity. Participants who preferred to complete the survey online could read the instructions online, and request the reports by contacting me.

Data Collection and Data Entry

When the total number of respondents reached 140, I decided that it was an acceptable number, and that continuous waiting on my part would not be productive or necessary. All data collected with paper questionnaires were entered by me using the Statistical Program for the Social Sciences (SPSS). All data collected online were first downloaded in Excel datasheets and later converted into a single SPSS data file. These two sets of data were then combined into a single SPSS data file and two new variables were added to distinguish data collected online and data collected on paper, and to distinguish data collected with English questionnaires and data collected with Chinese questionnaires. The first variable was called questionnaire format and the second variable was called language preference.

CHAPTER FIVE

RESULTS

This chapter describes the statistical procedures conducted to address each of the research questions and hypotheses, and presents the results of these analyses. First, preliminary analyses were conducted, and relationships between the indicators of subjective well-being, relationships between the indicators of Western-based religiousness, as well as the internal structure of Chinese-based religiousness measure were examined. Second, the relationship between Western-based religiousness and Chinese-based religiousness was examined by looking at the newly developed items and the adapted items of the Chinese-based religiousness separately. Third, the relationship between Western-based religiousness and subjective well-being and the relationship between Chinese-based religiousness and subjective well-being were examined. Fourth, the relationship between social support and subjective well-being, and the relationship between optimism and subjective well-being were both examined. Then the mediating functions of social support and optimism were tested. And finally the relationships between other variables and subjective well-being were examined.

Preliminary Analyses

This section describes the relationships among the indicators of subjective well-being, and the relationships among the indicator of Western-based religiousness. Furthermore, the internal structure of the Chinese-based religiousness measure was examined by using the factor analysis procedure.

Relationship Between the Indicators of Subjective Well-Being

There were two indicators of subjective well-being in this study, life satisfaction and depression. A moderate negative correlation (r = -.52, p< .01) was found between life satisfaction and depression among the participants of this study. Similar findings were found by previous research. For example, Prelow et al. (2006) found a -.57 correlation between depression and life satisfaction using the same measures used in this study among 135 African American college students; Salsman et al. (2005) found a -.55 correlation between psychological distress (measured by using the Brief Symtom Inventory BSI) and life satisfaction (measured by SWLS) among 217 University students in the United States. The assumption that depression and life satisfaction were two different but related variables that could be used as indicators of subjective well-being was supported.

Relationships Between the Indicators of Western-Based Religiousness

There were four indicators of Western-based religiousness in this study, including strength of religious faith, intrinsic religiousness, extrinsic religiousness, and religious practices. The correlations between these variables are presented in Table 1. As demonstrated in this table, all four variables were positively correlated with each other. The correlations between strength of religious faith, intrinsic religiousness and religious practices were very high, but their correlations with extrinsic religiousness were quite low.

Table 1

Correlations Between Western-Based Religiousness Variables

Variable	1	2	3	4
1. Strength of faith	—			
2. Intrinsic	.90	—		
3. Extrinsic	.33	.19[a]	—	
4. Religious practices	.90	.90	.26	—

Note. All correlations in this table are significant at .05 level.

[a]This correlation is the only one in this table that is not significant at .01 level.

The Internal Structure of the Chinese-Based Religiousness Measure

The Chinese-based religiousness measure consisted of two categories of items, the newly developed items and the adapted items. The internal structures of these two sets of items were examined separately.

Newly developed items. Factor analysis was conducted using the principle component procedure. Intercorrelations among all 14 items (see Appendix E) were all significant, and ranged from .18 to .80. The determinant of the correlation matrix was (0.000024) larger than the necessary value (0.000010), which indicated that multicollinearity was not a problem for these data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .89, which indicated that the pattern of correlations were relatively compact. The Bartlett's Test of Sphericity was significant at .001 levels, which indicated that the correlation matrix was not an identity matrix, and that there should be some relationship among the variables that can be examined by factor analysis. As indicated by the results of these preliminary tests, factor analysis was considered appropriate for these data.

As demonstrated in Table 2, three components that had eigenvalues larger than

one were extracted by SPSS, and accounted for 72% of the total variance. From Figure 2, which is a scree plot that shows the eigenvalues of all 14 components, we can see that the first component is positioned much higher on the eigenvalue dimension, and that after the third component the line become almost flat. There is a minor drop between the fourth and the fifth component however the difference on the vertical dimension is very small. I think the scree plot justified the decision of extracting the first three components.

Table 2

Three Components Extracted From the Newly Developed Items of Chinese-Based Religiousness Measure

Component	Initial eigenvalue	Variance explained (%)
1	7.42	53
2	1.63	12
3	1.03	7

Note. There are 14 components in total. The eigenvalues of the other 11 components were smaller than 1.0, and the percentages of variance explained were no more than 3 percent.

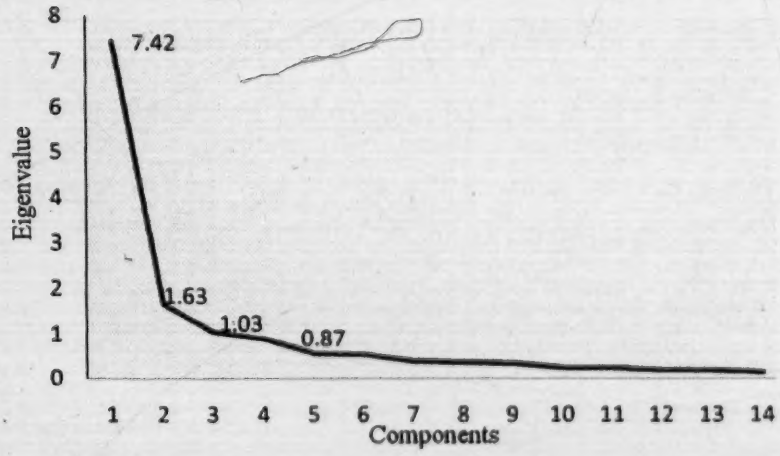

Figure 2. Post rotation eigenvalues of the 14 components obtained from factor analysis of the newly developed items of Chinese-based religiousness measure.

Table 3

The Newly Developed Chinese-Based Religiousness Items and Their Factor Loadings After Rotation

Item	Component		
	1	2	3
I believe that noble and saintly conduct will lead to rewards, either in this life or in the next life.	.86	—	—
I believe that evil conduct will lead to retribution, either in this life or in the next life.	.86	—	—
I believe that people's pathways of life have been predetermined.	.85	—	—
The spirits of ancestors will look after the welfare of their descendents.	.74	—	—
I believe people should consult specialists of Feng Shui when they are building houses.	.52	—	—
A spirit of the dead can descend via spirit possession into a living body.	.51	—	—
I believe there are many different deities.	.49	—	—
I have altars, shrines, or statuettes of deities at my workplace.	—	.94	—
I have alters, shrines, name plaques of the dead, or statuettes of deities at home.	—	.89	—
People can pursue immortality by cultivating themselves according to religious doctrines.	—	—	-.98
I believe that the underworld/hell has eighteen different levels.	—	—	-.72
I believe that spirits of the dead will be brought to the underworld/hell by the specters from there.	—	—	-.64
I worship one or more Chinese deities.	—	—	-.61
I believe in reincarnation.	.45	—	-.58

Note. Dashes indicate that the factor loading was smaller than .40.

A rotation converged in 12 iterations by using the Oblimin with Kaiser Normalization procedure; the factor loadings for each of the 14 items are presented in Table 3. As demonstrated in Table 3, each of the three components falls on different

items except for the last item, where both the first and the third components have a significant loading. The first component falls on the items that were explaining the mechanism of both the natural world and the spiritual world, including those that demonstrated the belief of cause and effect (Karma) originated from Buddhism (e.g. "I believe that noble and saintly conduct will lead to rewards, either in this life or in the next life."). The second component falls on the two items that were related to Chinese religious rituals and practices. The third component generally falls on items that explained what happens after death, except for one item that was more like a religious practices item (i.e. "I worship one of more Chinese deities").

A score for each component was calculated as the sum of scores from the items that had loadings from that component. For example, the score of the first component was the sum of scores of the first seven items plus the score of the last item in Table 3. Please note that the last item had loadings from both the first and the third components and it was used in the calculation for both components. As demonstrated in Table 4, all correlations between the components and the total score of all 14 items ranged from moderate to strong. For the second component, its correlations with the other variables were less strong than the other correlations. It might be that there were only two items had loadings from this component, which leads to less reliability of the score, and less reliability leads to weaker correlations. The total score was used in later analyses despite the fact that there were three components of this measure, because the Cronbach's alpha was .93 and the correlations between each of the components and the total score were strong.

Table 4

Correlations Between the Three Components and the Total Score of the Newly Developed Items of Chinese-Based Religiousness Measure

Component	1	2	3
1	—		
2	.39	—	
3	.77	.54	—
Total Score	.95	.61	.91

Note. All correlations in this table are significant at the .01 level.

Adapted items. Factor analysis procedure was conducted on the 15 adapted Chinese-based religiousness items. The intercorrelations among these items ranged from .02 to .81 with a mean of .35. The majority of the correlations were significant at the .01 level (see Appendix F). The determinant was 0.000038, which was larger than the necessary value 0.00001, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy equals to .83, and the Bartlett's Test of Sphericity was significant at .001 levels. All these preliminary tests results indicated that factor analysis was appropriate. Three components that had eigenvalues larger than one were extracted by SPSS, and accounted for 68% of the total variance. The scree plot confirmed with the extracting of these first three components.

A rotation converged in 11 iterations by using the Oblimin with Kaiser Normalization procedure; the factor loadings for each of the 15 items are presented in Table 5.

Table 5

Adapted Religiousness Items and Their Factor Loadings After Rotation

No.[a]	Item	Component 1	2	3
1.	My relationship with the deity/deities that I worship is extremely important to me. (Faith)	.89		
2.	I consider myself active in my religious community/organization/group. (Faith)	.82		
3.	It is important to me to spend time in private religious practices, such as prayer, meditation, and recitation of scriptures. (Intrinsic)	.81		
4.	I have often had a strong sense of the presence of spirits or of deities. (Intrinsic)	.80		
5.	How often do you seek guidance, help, or forgiveness through prayer, meditation, recitation of religious scriptures, or other traditional Chinese religious practices? (Practices)	.75		
6.	I pray to the deity/deities every day. (Faith)	.75		
7.	How often do you go to temples or other holy places to worship the deity/deities? (Practices)	.60		
8.	I go to temples or other holy places mainly because I enjoy seeing people I know there. (Extrinsic)		.87	
9.	I go to temples or other holy places mostly to spend time with my friends. (Extrinsic)		.78	
10.	I attend public religious activities because it helps me to make friends. (Extrinsic)		.74	
11.	I pray to clan spirits mainly to gain relief and protection. (Extrinsic)		.70	.41
12.	Religious practices, such as prayer, meditation, and the recitation of religious scriptures, are for peace and happiness. (Extrinsic)		.54	
13.	How often do you make offerings to your ancestors or to the dead of the family? (Practices)			.81
14.	Do you celebrate Qingming, Buddha's Birthday, Yulanjie, or other traditional Chinese religious festivals in a religious way? (Practices)			.76
15.	How often do you seek guidance, help, or forgiveness from the deities or from clan spirits? (Practices)	.46		.51

Note. After each item, the type of the corresponding original item was indicated in the brackets.
[a]The numbers in this column were assigned to these items temporarily to help the demonstration , and they do not represent any specific order that these items were in.

As demonstrated in Table 5, each of the three components falls on different items except for two items (i.e. item 11 and item 15). The first components fell mostly on the strength of religious faith and intrinsic religiousness items, the second component fell on the extrinsic religiousness items, and the third component fell mostly on the religious practices items.

The correlations between the components and the total score are shown in Table 6. Because the three components were moderately correlated with each other but strongly correlated with the total score, the total score was used in later analysis. The Cronbach's alpha was .90 for these 15 items, which supported the assumption that they were measuring something in common.

Table 6

Correlations Between the Three Components and the Total Score of the Adapted Items of Chinese-Based Religiousness Measure

Component	1	2	3
1	—		
2	.51	—	
3	.47	.62	—
Total Score	.91	.81	.66

Note. All correlations in this table are significant at the .01 level.

To determine if the two different measures of Chinese-based religiousness are measuring the same construct, the correlation between the total score for the newly developed items and the total score for the adapted items was calculated. A positive correlation ($r = .63, p < .01$) was found between these two indicators of Chinese-based religiousness.

Relationship Between Western-Based Religiousness and Chinese-Based Religiousness

Correlations between the Western-based religiousness indicators and the Chinese-based religiousness indicators are presented in Table 7. The results revealed that the total score for the newly developed items was significantly correlated with extrinsic religiousness; and the total score for the adapted items was significantly correlated with both strength of religious faith and extrinsic religiousness.

Table 7

Correlations Between Western-Based Religiousness and Chinese-Based Religiousness

	Western-based			
Chinese-based	Strength of faith	Intrinsic	Extrinsic	Practices
Newly developed	-.01	-.11	.31[a]	-.06
Adapted	.20[a]	.12	.51[a]	.11

[a]Significant at the .01 level.

At this point, the nature of the relationship between Western-based religiousness and Chinese-based religiousness was still unclear. I hypothesized that Western-based religiousness and Chinese-based religiousness would be positively yet moderately associated, and this hypothesis could only be supported if extrinsic religiousness was the only indicator of Western-based religiousness. However, even the associations between extrinsic religiousness and Chinese-based religiousness could be spurious because a large proportion of the participants (58%) were not affiliated to any religion at the time of study, and their might get similar scores on every religiousness question, no matter if it was Western-based or Chinese-based.

An attempt was made to further examine these associations by separating the participants who were Christians (N=54) and the participants who were not affiliated with any religion (N=82) from the whole sample, and by comparing their correlations between the religiousness variables. The number of participants who were affiliated with non-Christian religions was too small hence their responses were not included in this part of the analysis. As demonstrated in Table 8, all correlations were statistically significant, moderate, and positive for participants who were not affiliated with any religion. For these participants, it probably made no difference if the religiousness measure were Western-based or Chinese-based.

However, among the participants who were Christians, all Western-based religiousness measures correlated positively with each other except for extrinsic religiousness, which was found negatively correlated with the other three Western-based religiousness measures. The newly developed items and the adapted items of Chinese-based religiousness were both negatively correlated with the Western-based religiousness measures, except for extrinsic religiousness. Although some of the correlations mentioned above were not statistically significant, we can still observe a pattern among the correlations. In other words, participant in this group who had a high score on strength of religious faith probably had high scores on intrinsic religiousness and religious practices, but low scores on extrinsic religiousness and Chinese-based religiousness.

Table 8

Correlations Between Western-Based Religiousness and Chinese-Based Religiousness Among Participants Who Were Christians and Among Participants Who Were Not Affiliated With Any Religion

Variable	1	2	3	4	5	6	7
1	—						
2	.81 (.56)	—					
3	-.43 (.51)	-.50 (.32[b])	—				
4	.73 (.56)	.75 (.44)	-.51 (.58)	—			
5	-.22 (.41)	-.37 (.39)	.27 (.41)	-.22 (.44)	—		
6	-.24 (.44)	-.31[a] (.41)	.36 (.64)	-.36 (.49)	.59 (.76)	—	
7	.66 (.69)	.57 (.53)	.13 (.91)	.65 (.76)	-.10 (.48)	-.08 (.66)	—

Note. 1-strength of religious faith, 2-intrinsic religiousness, 3-extrinsic religiousness, 4-religious practices, 5-newly developed items of Chinese-based religiousness, 6-adapted items of Chinese-based religiousness, 7-the original counterparts of adapted items. The correlations outside of the brackets are the correlations among participants who were Christians, and the correlations in the brackets are the correlations among participants who were not affiliated with any religion.

[a]Correlations in this table that has a absolute value equals to or larger than .31 are significant at the .05 level.

[b]Correlations in this table that has a absolute value equals to or larger than .32 are significant at the .01 level.

As mentioned previously, each of the adapted items of Chinese-based religiousness was developed by changing the wording of an original item from the Western-based religiousness measures. A total score for all the original items from the Western-based religiousness measures was calculated (Cronbach's alpha was .90), and was found to be correlated ($r = .30$, $p < .01$) with the total score for the adapted items. However, this positive correlation was no longer significant when only responses from

Christian participants were included; which suggested that for these participants, Chinese-based religiousness was different from Western-based religiousness.

To summarize, findings were mixed about the relationships between Western-based religiousness and Chinese-based religiousness among participants with different religious affiliation status. A moderate yet positive association was found between these two constructs among participants who were not affiliated with any religion. But among the participants who were affiliated with Christianity, Chinese-based religiousness was negatively associated with strength of faith, intrinsic religiousness, and religious practices, but was positively associated with extrinsic religiousness, and extrinsic religiousness was negatively associated with the other three Western-based religiousness indicators.

Relationship Between Religiousness and Subjective Well-Being

In this section, the relationships between religiousness and subjective well-being are examined. As demonstrated in Table 9, only three of the Western-based religiousness indicators were significantly associated with depression, and none of them was significantly associated with life satisfaction. For the Chinese-based religiousness indicators, only the total score of the newly developed items was significantly associated with depression. Although some of the correlations were not statistically significant, we can still see a pattern of these correlations: the Western-based religiousness indicators were positively associated with life satisfaction and negatively associated with depression, and the Chinese-based religiousness indicators were negatively associated with life satisfaction and positively associated with depression. This finding was consistent with the result demonstrated in previous

section regarding the relationship between Western-based religiousness and Chinese-based religiousness among participants who were Christians, which indicated that Western-based religiousness and Chinese-based religiousness were negatively associated with each other.

Table 9

Relationship Between Religiousness and Subjective Well-Being

Variable	Life Satisfaction	Depression
Western-based		
1. Strength of faith	.15	-.19[a]
2. Intrinsic	.11	-.13
3. Extrinsic	.02	.06
4. Religious practices	.17	-.18[a]
Chinese-based		
5. Newly developed	-.11	.23[b]
6. Adapted	-.09	.15

[a]Significant at the .05 level.

[b]Significant at the .01 level.

Relationships Between Social Support, Optimism, and Subjective Well-Being

Social support was found correlated negatively with depression (r =-.43, p <.01). and positively with life satisfaction (r =.53, p <.01). Optimism was also found correlated negatively with depression (r =-.36, p <.01), and positively with life satisfaction (r =.31, p <.01).

Mediating Functions of Social Support and Optimism

The theoretical model (see Figure 1) tested in this study was a mediation model. According to Baron and Kenny (1986, as cited in Salsman et al., 2005), the following

conditions must be met to test for mediation. First, the independent variable must be significantly associated with the dependent variable. Second, the mediating variable must be significantly associated with both the independent and the dependent variables. Third, when the mediator is controlled, the previously significant relationship between the independent variable and dependent variable decreases significantly.

According to the first condition for testing mediation, intrinsic religiousness, extrinsic religiousness, and the adapted items were not included in further analysis because they were not significantly associated with any of the dependent variables. The other three religiousness variables, including two Western-based religiousness indicators—strength of religious faith and religious practices, and the newly developed items of Chinese-based religiousness, were qualified as independent variables for the mediation model. And because none of the religiousness variables were significantly associated with life satisfaction, only depression was qualified as the dependent variable for the mediation model.

Table 10

Associations of Social Support and Optimism With Religiousness and Depression

Variable	Social Support	Optimism
Western-based religiousness		
Strength of religious faith	.20[a]	.11
Religious practices	.23[b]	.13
Chinese-based religiousness		
Newly developed items	-.15	-.33[b]

[a]Significant at the .05 level.

[b]Significant at the .01 level.

Both social support and optimism were negatively correlated with depression. As demonstrated in Table 10, social support was found significantly correlated with both Western-based religiousness indicators, but not with Chinese-based religiousness. Optimism was significantly correlated with Chinese-based religiousness, but not with the Western-based religiousness indicators.

According to the second condition of testing mediation, both social support and optimism were qualified as mediating variables because each of them has significant associations with at least one pair of independent and dependent variables. Three path graphs were included in Figure 3 to demonstrate the mediations to be tested.

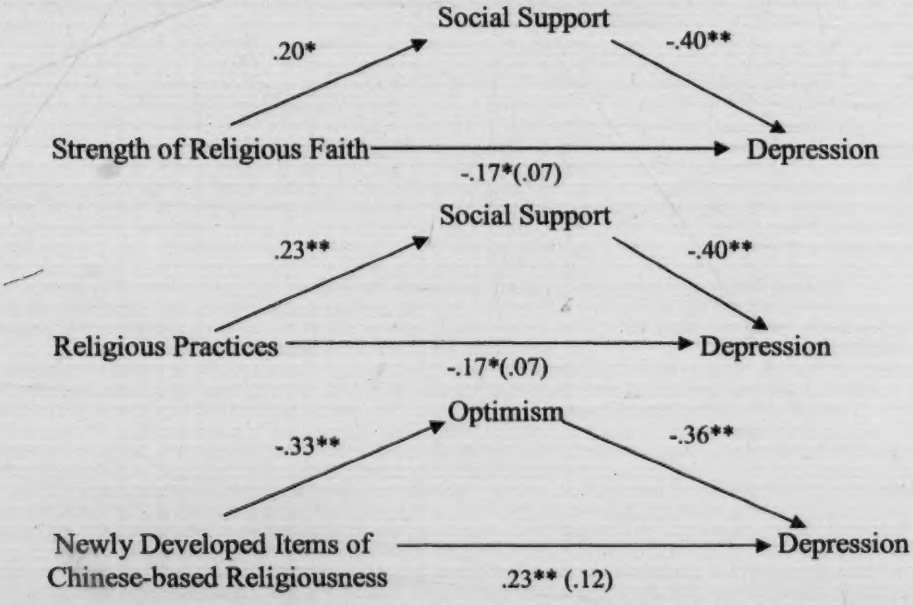

Figure 3. The mediating role of social support and optimism: All correlations were statistically significant (*$p < .05$, **$p < .01$) except for the three partial correlations (in brackets).

Although the correlation between strength of religious faith changed from negative to positive, it doesn't necessarily suggest that the controlling of social support

altered the nature of the relation between strength of religious faith and depression, because the partial correlation (r =.07) was not statistically significant. The same explanation can be applied to the correlation between religious practices and depression. The correlation between strength of religious faith and depression, the correlation between religious practices and depression, and the correlation between the newly developed items of Chinese-based religiousness and depression were all decreased for more than a third (from.23 to .12, from -.17 to .07, and from -.17 to .07, respectively) when their mediating variables were controlled. According to *Jackson's rule of thirds* (Jackson, 1995), if the correlation decreased by one-third or more, the decrease of this correlation could be interpreted as a *decrease/disappearance* of the relationship. As a result, the mediating functions of social support and optimism were supported by data. To summarize, social support was found mediating the effect of both strength of religious faith and religious practice on depression, and optimism was found mediating the effect of Chinese religiousness (as measured by the newly developed items) on depression.

Relationships Between Other Variables and Subjective Well-Being

Analyses were conducted to see if any of the other variables were significantly associated with subjective well-being.

English Proficiency

The participants in this study have relatively high English proficiency levels; mean scores and ranges of English proficiency can be found in Appendix G. For the self-report English proficiency, all four aspects were found to be highly correlated with each other. As you can see in Table 11, the correlation coefficients range from .74 to

.81. A total score was calculated as the sum of the four aspects.

Table 11

Correlations Between the English Proficiency Measures

	Self-report				
Measure	Listening	Speaking	Reading	Writing	Cloze
Self-report					
Listening	—				
Speaking	.81	—			
Reading	.80	.79	—		
Writing	.74	.79	.78	—	
Cloze	.34	.32	.30	.36	—

Note. All correlations were significant at the .01 level (2-tailed).

Moderate positive correlations were found between the four aspects of self-report proficiency and the cloze test score (see Table 11). The correlation between the total score of the self-report proficiency and the cloze test score was also significant (r =.36, p <.01). The self-report English proficiency was found negatively correlated with depression (r =-.20, p < .05). No significant association was found between the self-report English proficiency and life satisfaction, between the English cloze test score and life satisfaction, and between the English cloze test score and depression.

Social Desirability

Social desirability was found negatively correlated with depression (r =-.27, p < .01), but no significant association was found between social desirability and life satisfaction.

Demographic Variables

The demographic variables were examined to see if any of them has a significant association with any of the two dependent variables—depression and life satisfaction.

Ethnic identification. In the case of ethnic identification, most of the participants recognized their Chinese ethnic background, demonstrated by the fact that 58% identify themselves as Chinese, and 36% as Chinese Canadian. The Chinese Canadian group reported significantly higher (t =-.20, p <.05) life satisfaction level (M=25.9) than the Chinese group (M=23.7). However, no significant difference between these two groups was found on depression.

Employment status. The majority of the participants were employed (82%). Because the number of participants who reported *self-employed* was too small (N=4, see Appendix A), data from these participants were combined with data from the employed participants to form a new employed group. The unemployed group reported significantly (t =-2.11, p <.05) higher depression scores (M=14.8) than the employed group (M=11.0), but no significant difference on life satisfaction level was found between these two groups.

Annual income. Income was found significantly associated with both life satisfaction (r =.31, p < .01) and depression (r =-.18, p < .05).

Length of stay. Length of stay was found positively correlated with life satisfaction (r =.24, p < .01), but no significant association was found between length of stay and depression.

Legal status. All participants in this study have obtained long-term residence in Canada; they are either Canadian citizens (55%) or permanent residents in Canada (45%). The Canadian citizens (M=25.6) were found to have significantly (t =-2.12, p <.05) higher scores on life satisfaction than the permanent residents (M=23.4), but not no significant difference was found on depression level between these two groups.

Age, gender, education, marital status, having or not having children, previous and current religious affiliation, as well as language preference and questionnaire format, were not associated with any of the dependent variables. In this study, 86% of the participants came from Mainland China. As a result, place of origin was not included as a variable in the analysis due to its high homogeneity.

To summarize, income and employment status were found significantly associated with depression; income, ethnic identity, length of stay, and legal status were found significantly associated with life satisfaction. Income was the only variable that was significantly associated with both life satisfaction and depression.

CHAPTER SIX

DISCUSSION

In this chapter, the results of the current study are summarized integrating the findings of previous studies. Limitations and implications of the study as well as suggestions for future research are addressed.

Discussion of Research Findings

Relationships Between Religiousness Measures

In psychological studies, religiousness has frequently been measured using single-item indices such as frequency of religious activities, church attendance, et cetera (Bramadat & Seljak, 2005; Salsman et al. 2005). In this study, not only were several published religiousness measures used to measure different aspects of religiousness, but also a 29-item questionnaire was developed to measure religiousness based on Chinese cultural norms and customs.

The findings of this study regarding these religiousness measures, however, were complicated. First of all, the indicators of Western-based religiousness were found associated with each other differently among participants with different religious affiliation status. Among the participants who were Christians, extrinsic religiousness was found negatively associated with the other three Western-based religiousness indicators, including strength of religious faith, intrinsic religiousness, and religious practices. But among the participants who were not affiliated with any religion, all correlations between the Western-based religiousness indicators were positive. Second, the nature of the relationship between Western-based religiousness and Chinese-based

religiousness also varied among participants with different religious affiliation status. Among participants who were Christians, Chinese-based religiousness was negatively associated with all Western-based religiousness indicators except for extrinsic religiousness. Among participants who were not affiliated with any religion, Chinese religiousness was positively associated with all Western-based religiousness indicators.

One plausible explanation for these mixed findings was that the participants who were not affiliated with any religion provided similar responses to all religiousness measures regardless if they were Western-based or Chinese-based. And the reason why their religiousness scores correlated was the effect of a common factor that influenced both their Western-based religiousness and Chinese-based religiousness. This common factor could be a personal factor such as individual's spirituality.

Among the items of Chinese-based religiousness, some of them were describing Chinese religious beliefs and practices that were contradictory to the doctrines and teachings of Christianity. For example, "I belief in reincarnation" was contradictory to the Christian belief of heaven, and "I believe there are many different deities" was contradictory to the Christian belief of only one God. These contradictory items might have caused the Christian participants to respond negatively to these items and hence the negative correlations between Chinese-based religiousness and the three Western-based religiousness indicators—strength of religious faith, intrinsic religiousness, and religious practices.

In this study, extrinsic religiousness was found positively correlated with Chinese-based religiousness among all participants. A plausible explanation for this phenomenon was that participants who had higher scores on Chinese-based

religiousness, as compared to participants who had lower scores on Chinese-based religiousness, were more likely to have extrinsic motives, such as to make friends, to learn about the hosting culture, and to gain social support, for attending Western religious services and utilizing their facilities. However, more studies are needed to test these plausible explanations and explore what the mechanism behind these mixed findings is.

Relationship Between Religiousness and Subjective Well-Being

The first objective of this study was to examine the effect of religiousness on Chinese immigrants' subjective well-being, as indicated by levels of life satisfaction and depression. The results of this study indicated that life satisfaction was not significantly associated with any of the religiousness variables, and depression was only significantly associated (the correlation coefficients ranged from -.19 to .23) with three out of the six religiousness variables, including two Western-based religiousness variables and one Chinese-based religiousness variable.

From the result, we found that the associations of Western-based religiousness variables with depression were very different from the associations of Chinese-based religiousness with depression. The two Western-based religiousness variables (i.e. strength of religious faith and religious practices) were found negatively associated with depression, which was consistent with previous research findings (Hackney & Sanders, 2003) and with my hypothesis regarding this relationship. And as demonstrated in the results, Chinese-based religiousness was found positively associated with depression, which was the opposite of the hypothesis I had regarding this relationship. This result suggests that Western-based religiousness and Chinese-

based religiousness had opposite effects on depression, and it further suggests that Western-based religiousness and Chinese-based religiousness are two different constructs.

It was contradictory to my hypothesis that a higher level of Chinese-based religiousness (as measured by the newly developed items) was associated with a higher level of depression. It could be that instead of being a source of hope and support, Chinese religious beliefs and practices were really having an adverse effect on Chinese immigrants' adjustment in Canada. Or it could be there were other factors that were confounding this relationship and the positive correlation was spurious. More specific analyses were needed to further examine the relationship between Chinese-based religiousness and depression.

Mediating Functions of Social Support and Optimism

The second goal of this study was to examine if social support and optimism were mediating the effect of religiousness on subjective well-being. Despite the fact that the associations found between three of the religiousness variables and depression were fairly moderate, all three decreased significantly when the effect of these mediating variables were controlled for. Interestingly enough, social support was found to mediate the effect of both Western-based religiousness variables on depression, whereas optimism was found to mediate the effect of Chinese-based religiousness on depression, which suggested that Western-based religiousness and Chinese-based religiousness had different mechanisms behind their effects on depression.

Relationships Between Other Variables and Subjective Well-Being

In this study, both life satisfaction and depression were used as indicators of subjective well-being. Among all the factors examined in this study, social support, optimism, self-report English proficiency, social desirability, annual income, and employment status were found associated with depression; social support, optimism, income, ethnic identity, length of stay, and legal status were found associated with life satisfaction. Other variables, including age, gender, education, marital status, whether or not have children, religious affiliation, language preference and format of the questionnaire, were not found associated with any of the two subjective well-being indicators. Because the effects of these variables on subjective well-being had already been studied by many previous studies, and because my primary goal for this study was to examine the mechanism and the nature of the relationship between religiousness and subjective well-being, a detailed discussion on the effect of these variables is not included here.

Limitations of Current Study

There were five major limitations of this study; the first is the limited representativeness of the sample, the second is the limited internal validity of this study, the third is possible biases created by my self-stance as a non-religious member of the Chinese immigrant community, the fourth is the insufficient evidence of validity for the newly developed items of Chinese-based religiousness, and the fifth is the lack of examination on the participants' acculturation status and its role in the theoretical model.

Limited Sample Representativeness

As previously mentioned in the *Procedure* section of *Chapter Four,* the sample of this study was recruited through distribution of online/paper advertisements, personal contacts, and referrals. It was a sample that drawn by convenience and availability, and as a result, the sample was quite homogeneous in several demographic categories and had limited representativeness. For example, 98 percent of them had received post secondary education; 86 percent of them came from Mainland China. The findings of this study might not be applicable to people who did not fit these descriptions. All participants were drawn from the Edmonton area, so the results might not be applicable to Chinese immigrants who live in a different area. And because participation in this study was voluntary, it is possible that findings of this study were biased because people who did not agree to participate had certain characteristics that could affect the results.

Limited Internal Validity

In this study, the relationships among the variables in the theoretical model were proposed to be causal relationships. To support the proposition of causality, evidence is needed to show that the presumed causes precede the presumed results in time. However, in this study, all variables were measured at one point in time and no such evidence was obtained. As a result, despite the fact that significant associations were found between the variables, we cannot be certain about the causal direction of these associations.

Possible Biases Lead by My Self-Stance as a Non-Religious Member

As a non-religious member of the Chinese immigrant community, my knowledge

of the Chinese religions is quite limited. Although I've argued in previous sections that Chinese religious beliefs and customs are very much infused into the culture and the social customs, so that as a member of the society I should be quite familiar with them, my self-stance as a non-religious person could have biased my judgement about which of the phenomena were most representative of Chinese-based religiousness.

Evidence of Validity for the Newly Developed Items of Chinese-Based Religiousness

The development of the newly developed items of Chinese-based religiousness was based on my knowledge about Chinese religious customs and cultural norms, and on the information I collected through reading and studying of the literature. Although the internal structure of this measure was examined by factor analysis, the validity of this measure needs further examination. My knowledge about this construct was still very limited and the development of these items was not very systematic. Basically what I did was list all the Chinese religious beliefs or practices I had heard of, seen, or read about, and created an item for each of the things I had in this list. I am not sure how inclusive or representative the list was. Factor analysis extracted three components from the 14 items, however, it is possible that there were more than three aspects of Chinese-based religiousness, and that I overlooked them while developing the items. Maybe with help from an expert in the field, or by conducting surveys of Chinese religious beliefs and practices, the validity of this measure could be improved.

Lack of Examination on Acculturation Status

In social studies among immigrants and ethnic groups, acculturation is often considered as a very important factor that influences well-being. In this study, however, the effect of acculturation status was not fully examined. In this study,

participants' legal status and length of stay were measured; however, the associations between these acculturation status indicators and the subjective well-being indicator were only briefly discussed due to limited time available to complete the study.

Implications

There are two areas of psychological studies that the results of this study have implications for, including acculturation studies and studies of religiousness.

Implications for Acculturation Studies

Acculturation studies among immigrants have often over looked the effect of religiousness on their adjustment and well-being. The positive correlation found between extrinsic religiousness and Chinese-based religiousness in this study suggested a possibility that Chinese immigrants were utilizing western religious services and activities as revenues for social network and support. Also, results of this study suggested a diverse mechanism behind the relationship between religiousness and subjective well-being among Chinese immigrants in Canada, which could vary based on individuals' religious affiliation status (whether or not affiliated with a certain religion), and the cultural context in which that religiousness was measured (Western or Chinese). These findings might increase the interest of researchers in studying religiousness as an acculturation institution for immigrants and as a predictor of immigrants' adjustment, which should be looked at carefully through the lenses of the participants' cultural backgrounds.

Implications for Studies of Religiousness

Religiousness has often been measured by single item indices such as church

attendance (Bramadat & Seljak, 2005). However, the latest theories of religiousness (Hackney & Sanders, 2003) suggest that it is a multifaceted construct and should be measured by using more than one measure. In this study, religiousness was not only measured as a multifaceted construct, but it was also measured in different cultural contexts. Result of this study indicated that religiousness could have very different effects on subjective well-being in different cultural contexts. The findings of this study could bring more awareness among the researchers and encourage them to study religiousness as a culturally specific construct.

Directions for Future Studies

Based on the previous discussion about the limitations and implications of this study, I suggest three directions for future studies. First, qualitative studies can be conducted to explore the mechanism and causal connections between religiousness and subjective well-being. Second, cross-cultural studies can be conducted to compare the effect of religiousness in different cultural contexts. And third, similar studies can be conducted among other ethnic groups in Canada to learn more about the role religion plays in a multicultural society as a social institution.

Qualitative Studies

Quantitative studies are very helpful in examining and comparing relationships between various factors. However, when the nature of associations between factors is not clear, qualitative studies might be more helpful in exploring the nature of these associations through in-depth observations of people's behaviours and feelings. In this study, the findings were mixed regarding the relationships between cultural specific

religiousness constructs themselves and the relationships between these religiousness constructs and other factors such as subjective well-being, social support, and optimism. Qualitative research techniques such as case study and focus group might help us to gain in-depth understandings about the phenomena observed in this study.

Cross-Cultural Studies

Cross-cultural studies of religiousness using the same measures that were used in this study can be conducted to further evaluate the effect of religiousness on subjective well-being in different cultural contexts. For example, by comparing people who live in China to people who are Chinese immigrants in Canada regarding the effect of religiousness on subjective well-being, we could test if the effect of Chinese-based religiousness on depression would change when the cultural environment changes.

Similar Studies Among Other Ethnic Groups in Canada

Similar studies can be conducted among other ethnic groups in Canada; however, new religiousness measures need to be developed based on these ethnic groups' cultural norms before we could conduct such studies. For example, a religiousness measure based on Japanese religious customs and cultural norms could be developed if studying Japanese immigrants in Canada. Comparing the results of these studies could help explore how culturally specific the construct of religiousness is, and help study its effect on subjective well-being on cultural specific terms. The religiousness measures developed based on different cultural norms in these studies could later be used to measure religiousness more accurately in other studies among these ethnic groups.

Conclusion

In conclusion, this study has been able to demonstrate the importance of using more cultural specific measures when studying religiousness among immigrants and ethnic groups with distinct cultural backgrounds, it has also shed some light on how western-based religiousness and Chinese-based religiousness could have different effects on Chinese immigrants' subjective well-being. Despite the limitations of this study, the results obtained from this study are still helpful for furthering our understanding of the role that religion could play in the acculturation process of the Chinese immigrants in Canada. Because religiousness ~~was not~~ frequently studied among any immigrant or ethnic groups in Canada, this study could be seen as one step towards better understanding of cultural specific religion-related issues that these groups are having.

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Appendix A

Sample Characteristics by Demographic Variables

Variable	N	%
Sex		
Female	61	44
Male	79	56
Place of Origin		
Mainland China	121	86
Hong Kong	9	6
Taiwan	7	5
Other	3	2
Ethnic Identity		
Chinese	81	58
Canadian	8	6
Chinese Canadian	50	36
Other	1	1
Employment Status		
Employed	115	82
Self-employed	4	3
Unemployed	21	15

Appendix A (continued)

Variable	N	%
Marital Status		
Single never married	31	22
Married	105	75
Divorced	4	3
Education		
High school or equivalent	3	2
College or other postsecondary	20	14
Bachelor's degree	56	40
Master's degree or higher	61	44
Legal Status		
Permanent resident	63	45
Citizen	77	55
Have Children?		
Yes	87	62
No	53	38
Previous religious affiliation		
Christianity	15	11
Islam	1	1
Chinese Buddhism	9	6
Daoism	1	1
Not affiliated	113	81

Appendix A (continued)

Variable	N	%
Current religious affiliation		
Christianity	54	39
Chinese Buddhism	1	1
Daoism	1	1
Other Chinese religions	1	1
Not affiliated	82	58

Appendix B

Newly Developed Chinese-Based Religiousness Items

Item
1. I believe that people's pathways of life have been predetermined.
2. The spirits of ancestors will look after the welfare of their descendents.
3. I believe people should consult specialists of Feng Shui when they are building houses.
4. I believe in reincarnation.
5. I believe that evil conduct will lead to retribution, either in this life or in the next life.
6. A spirit of the dead can descend via spirit possession into a living body.
7. I believe there are many different deities.
8. I have altars, shrines, or statuettes of deities at my workplace.
9. I believe that spirits of the dead will be brought to the underworld/hell by the specters from there.
10. People can pursue immortality by cultivating themselves according to religious doctrines.
11. I believe that noble and saintly conduct will lead to rewards, either in this life or in the next life.
12. I have alters, shrines, name plaques of the dead, or statuettes of deities at home.
13. I believe that the underworld/hell has eighteen different levels.
14. I worship one or more Chinese deities.

Appendix C

Adapted Items of Chinese-Based Religiousness and Corresponding Original Items

No.[a]	Revised	Original
82	I pray to the deity/deities every day.	I pray daily.
83	I consider myself active in my religious community/organization/group.	I consider myself active in my faith or church.
84	My relationship with the deity/deities that I worship is extremely important to me.	My relationship with God is extremely important to me.
86	It is important to me to spend time in private religious practices, such as prayer, meditation, and recitation of scriptures.	It is important to me to spend time in private thought and prayer.
87	I have often had a strong sense of the presence of spirits or of deities.	I have often had a strong sense of God's presence.
85	I attend public religious activities because it helps me to make friends.	I go to church because it helps me to make friends.
88	I pray to clan spirits mainly to gain relief and protection.	I pray mainly to gain relief and protection.
89	Religious practices, such as prayer, meditation, and the recitation of religious scriptures, are for peace and happiness.	Prayer is for peace and happiness.
90	I go to temples or other holy places mostly to spend time with my friends.	I go to church mostly to spend time with my friends.
96	I go to temples or other holy places mainly because I enjoy seeing people I know there.	I go to church mainly because I enjoy seeing people I know there.
104	How often do you go to temples or other holy places to worship the deity/deities?	How often do you attend religious services?
105	How often do you make offerings to your ancestors or to the dead of the family?	How often do you attend religious services?

Appendix C (Continue)

No.[a]	Revised	Original
106	How often do you seek guidance, help, or forgiveness through prayer, meditation, recitation of religious scriptures, or other traditional Chinese religious practices?	How often do you seek guidance, help, or forgiveness through prayer?
107	How often do you seek guidance, help, or forgiveness from the deities or from clan spirits?	How often do you seek guidance, help, or forgiveness through prayer?
108	Do you celebrate Qingming, Buddha's Birthday, Yulanjie, or other traditional Chinese religious festivals in a religious way?	Do you observe religious holidays and celebrate events like Christmas or Passover in a religious way?

Note. The original item and its corresponding original item share the same label, which is a combination of capitalized letter r and a number. R1, R2, and R3 were chosen from the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997). R4 and R5 were chosen from the intrinsic subscale of the Intrinsic/Extrinsic Religiousness Scale-Revised (Gorsuch & McPherson, 1989). R6 to R10 were chosen from the extrinsic subscale of the Intrinsic/Extrinsic Religiousness Scale-Revised (Gorsuch & McPherson, 1989). The last five items were chosen from the modified second section of the Minnesota Twin Registry Religious Background and Practices Survey (Koenig et al., 2005).

[a]These are number of questions, which indicates the place of each item in the whole questionnaire.

Appendix D

Advertisement

Are You Chinese?

请问您是华人吗？

- Master's student at University of Alberta is studying Chinese immigrants' well-being.
- Your experiences and opinions are very important to this study.
- You can help further our understanding of Chinese immigrants' experience and adjustment.
- You are welcome to participate if you are a **permanent resident or a citizen of Canada**, you have a **Chinese ethnic background**, you were **born outside of Canada**, you have been living in Canada for **more than 3 years**, and you are between **20 and 60 years of age**.

For more details, please contact:

Jia Jia Tel: 780-xxx-xxxx Email: j@ualberta.ca**

Appendix E

Intercorrelations Between the Newly Developed Items of Chinese-Based Religiousness Measure

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. I believe that people's pathways of life have been predetermined.	—													
2. The spirits of ancestors will look after the welfare of their descendants.	.69	—												
3. I believe people should consult specialists of Feng Shui when they are building houses.	.48	.64	—											
4. I believe in reincarnation.	.46	.64	.64	—										
5. I believe that evil conduct will lead to retribution, either in this life or in the next life.	.51	.60	.48	.64	—									
6. A spirit of the dead can descend via spirit possession into a living body.	.47	.54	.45	.61	.56	—								
7. I believe there are many different deities.	.39	.53	.50	.57	.57	.65	—							
8. I have altars, shrines, or statuettes of deities at my workplace.	.18[a]	.21[a]	.22[a]	.32	.29	.30	.29	—						
9. I believe that spirits of the dead will be brought to the underworld/hell by the specters from there.	.38	.50	.45	.65	.49	.56	.60	.54	—					
10. People can pursue immortality by cultivating themselves according to religious doctrines.	.20[a]	.45	.40	.63	.30	.50	.47	.33	.70	—				
11. I believe that noble and saintly conduct will lead to rewards, either in this life or in the next life.	.49	.57	.47	.61	.80	.57	.57	.23	.45	.33	—			
12. I have alters, shrines, name plaques of the dead, or statuettes of deities at home.	.25	.35	.32	.34	.37	.36	.36	.78	.56	.34	.30	—		
13. I believe that the underworld/hell has eighteen different levels.	.33	.46	.47	.71	.53	.56	.53	.52	.78	.70	.45	.52	—	
14. I worship one or more deities.	.44	.62	.63	.61	.41	.47	.51	.37	.59	.56	.40	.50	.69	—

Note. All correlations in this table are significant at the .05 level.

[a]The correlation is significant at the .05 level but not at the .01 level. The correlations without this superscript are significant at the .01 level.

Appendix F

Intercorrelations Between the Adapted Chinese-Based Religiousness Items

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. I pray to the deity/deities every day.	—														
2. I consider myself active in my religious …	.72	—													
3. My relationship with the deity/deities…	.74	.79	—												
4. I attend public religious activities because …	.40	.37	.41	—											
5. It is important to me to spend time in …	.59	.71	.81	.45	—										
6. I have often had a strong sense of the …	.61	.69	.80	.39	.76	—									
7. I pray to clan spirits mainly to gain relief…	.35	.30	.38	.47	.29	.39	—								
8. Religious practices, such as prayer, meditation…	.46	.47	.58	.53	.52	.51	.57	—							
9. I go to temples or other holy places mostly to…	.34	.38	.38	.62	.48	.39	.46	.47	—						
10. I go to temples or other holy places mainly because…	.32	.33	.31	.63	.36	.36	.58	.51	.77	—					
11. How often do you go to temples or…	.38	.28	.45	.18[b]	.46	.41	.04[a]	.26	.04[a]	.06[a]	—				
12. How often do you make offerings…	.11[a]	.14	.22	.16[b]	.18[b]	.20	.31	.27	.06[a]	.09[a]	.43	—			
13. How often do you seek guidance, help…	.49	.44	.59	.12[a]	.46	.48	.09[a]	.33	.13[a]	.07[a]	.53	.26	—		
14. How often do you seek guidance, help…	.17[b]	.30	.41	.02[a]	.37	.40	.26	.23	.15[b]	.04[a]	.31	.35	.64	—	
15. Do you celebrate Qingming…	.17[b]	.07[a]	.14[a]	.24	.14[a]	.14[a]	.47	.27	.16[b]	.27	.10[a]	.47	.15[b]	.26	—

Note. A list of all these items are available in Appendix C

[a] $p > .05$. [b] $.05 > p > .01$

Appendix G

Means and Ranges on Scores of English Proficiency Measures

Variables	M	SD	Min	Max
Self-report	3.5	.8	1	5
Cloze test	14.5	14.5	0	28